

What is claimed is:

1. A method for oxidizing an organic compound comprising contacting the organic compound with a composition comprising a water soluble peroxygen compound and a pH modifier which maintains the pH of the composition at greater than about 10.
2. A method as in claim 1, wherein the organic compound is present in soil, sludge, sediment, bedrock, groundwater, process water or wastewater.
3. A method as in claim 1, wherein the organic compound is selected from the group consisting of volatile organic compounds, semi-volatile organic compounds, non-halogenated and halogenated solvents, polyaromatic hydrocarbons, total petroleum hydrocarbons, polychlorinated biphenyls, chlorinated benzenes, gasoline additives and pesticides.
4. The method as in claim 1, wherein the peroxygen compound is a dipersulfate.
5. The method as in claim 4, wherein the dipersulfate is selected from sodium, potassium or ammonium persulfate or a combination thereof.
6. The method as in claim 1, wherein the peroxygen compound is a monopersulfate.
7. The method as in claim 6, wherein the monopersulfate is selected from sodium and potassium monopersulfate.
8. The method as in claim 1, wherein the peroxygen compound is a combination of a dipersulfate and a monopersulfate.
9. The method as in claim 8 where the pH modifier is a metal hydroxide or sodium tripolyphosphate.
10. The method as in claim 1 wherein the pH modifier is sodium hydroxide, potassium hydroxide or calcium hydroxide.

11. The method as in claim 1, wherein the composition is introduced into soil in sufficient quantities and under conditions to oxidize substantially all the volatile organic compounds in the soil.
12. The method as in claim 11, wherein the composition is introduced into the soil either *in situ* or *ex situ*.
13. The method as in claim 11 wherein the peroxygen compound is added either together with the pH modifier, in sequence with the pH modifier, or in multiple, sequential addition steps with the pH modifier.
14. The method as in claim 12, wherein the soil is heated to a temperature up to 99 degrees C.
15. The method as in Claim 1, wherein the composition further includes a catalyst.
16. The method as in claim 15 wherein the catalyst consists of a divalent or trivalent transition metal.
17. The method as in claim 15 wherein the catalyst consists of a divalent or trivalent transition metal in combination with a chelating agent.